

### REMARKS

Reconsideration is respectfully requested.

#### Status of the Claims

Claims 1 and 10 are amended to correct spelling errors. Claim 1 is also amended to clarify that the first step of the claimed method occurs under anaerobic conditions. This amendment is supported in the specification at, for example, page 2, lines 8-10.

Claims 7 and 9 are amended to remove narrow ranges within broader claimed ranges. Claim 7 is also amended to provide an antecedent basis for “the bed.” Support for this amendment is found in original claim 2, which was canceled by preliminary amendment. Claim 2 originally provided the antecedent basis for “the bed” in claim 7.

New claims 11-14 are added to claim the narrow ranges removed from claims 7 and 9.

According, no new matter is added to the application. Upon entry of this Amendment, claims 1 and 7-14 are pending.

#### Claim Objections

Claims 1 and 10 have been objected to for containing spelling errors. The terms “organis” and “slude” have been corrected. The term “oxyugen-depleted” has been changed to “anaerobic,” which is used in the specification to describe the conditions of the process (*see, e.g.*, page 2, lines 8-10 of the specification). Applicants have addressed the informalities cited by the Examiner and, therefore, request that the objections be withdrawn.

Claim Rejections under 35 U.S.C. § 112

Claims 7 and 9 have been rejected as indefinite for claiming broad ranges together with narrow ranges that fall within them. The narrow ranges have been removed from claims 7 and 9 and claimed in new dependent claims 11-14.

Claim 7 has also been rejected as indefinite for lacking an antecedent basis for “the bed.” The proper antecedent basis has been incorporated from original claim 2.

The bases for the rejections have been addressed, and Applicants respectfully request that the rejections be withdrawn.

Claim Rejections under 35 U.S.C. § 102 and § 103

Claims 1, 7, 8, and 10 have been rejected as being anticipated by Beun et al., Water Res. 2002, 36:702-12 (“Buen I”); Dangcong et al., Water Res. 1999, 33(3):890-93 (“Dangcong”); Morgenroth et al., Water Res. 1997, 31(12):3191-94 (“Morgenroth”); and Buen et al., Biotech. and Bioeng. 2001, 75(1):82-92 (“Buen II”).

Claim 1 has been amended to clarify that in the first step of the claimed process, waste water is fed to the sludge granules under anaerobic conditions, i.e., no oxygen is added. This step of the process is described in the specification at page 2, lines 8-10.

In contrast, the cited references do not teach or suggest performing the feed stage of aerobic sludge granulation under anaerobic conditions. The cited references describe processes that suggest the introduction of air throughout the feed and aeration stages. In Buen I and Buen II, granulation is carried out in a sequential batch airlift reactor (SABR). *See* page 703, second column of Buen I and Abstract of Buen II. In the SABR, air is introduced by a bubble aerator to maintain a well-mixed reaction. *See* page 703, second column of Buen I. Dangcong describes a continuous airflow in the reactor and reports the effect of air flow rate on the dissolved oxygen concentration in

the reactor. *See* page 893, first column. Morgenroth discloses a sequencing batch reactor in which fine bubble air is introduced for mixing and aeration. *See* Fig. 1; page 3192, first column.

The Examiner cites passages of Dangcong and Buen II that describe maintaining a low concentration of dissolved oxygen during the reaction stage of the process to improve the settleability of the granulated sludge. *See, e.g.*, Abstracts of Dangcong and Buen II. However, the disclosure of low concentrations of dissolved oxygen pertains to the reaction stage, a stage of the process that is different from the waste water feed stage, which as specified in claim 1 takes place under anaerobic conditions. *See* Dangcong at page 893 and Buen II at pages 90-91.

Furthermore, the alleged “granular sludge” described in Dangcong agglomerated to form “a big floc” during the settling phase and settled with a Sludge Volume Index (SVI) of 80-100 ml/g. *See* page 892, second column. This is inconsistent with aerobic granular sludge, which does not floc and settles relatively rapidly. According to Buen I, “[a]erobic granular sludge can be cultured in a well mixed, aerated sequencing batch reactor (SBR). In these cases granular sludge with an SVI <50 ml/g were obtained. Dangcong et al. also report the occurrence of granular sludge in their system, although the SVI indicated in their paper of 100 ml/g seems to point to flocculated sludge.” Page 703, first column. Therefore, according to Buen I, Dangcong does not disclose a settling of “sludge granules” as recited in claim 1 because the settling sludge is a floc.

For each of the above reasons, claim 1 is not anticipated by the prior art of record. Claims 7, 8, and 10 depend from claim 1 and are not anticipated for at least the same reasons. Accordingly, Applicants respectfully request that the rejection be withdrawn.

Claim 9 has been rejected as obvious over any one of the references cited above. Claim 9 depends indirectly from claim 1, which is allowable over the cited references for at least the reasons discussed above. Therefore, claim 9 is not obvious, and the rejection should be withdrawn.

New Claims

New claims 11-14 depend directly or indirectly from claim 1 and are allowable for at least the same reasons.

CONCLUSION

In view of the above amendments and remarks, Applicants believe the pending application is in condition for allowance. If there are any remaining issue that the Examiner believes could be resolved through either a Supplemental Response or an Examiner's Amendment, the Examiner is kindly requested to contact the undersigned at the telephone number indicated below.

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Respectfully submitted,



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